

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended): An opto-electronic module having an optical port and an electrical port comprising:

a first substrate having electrical traces, a port end, and an interior end;

an opto-electronic device attached to and electrically connected to the first substrate wherein the opto-electronic device serves as the optical port wherein the opto-electronic device comprises:

a semiconductor chip package mounted to the first substrate;

a support block having a first face and a second face that are angled relative to one another with electrical traces that extend from the first face to the second face wherein the first face of the support block ~~[[base-substrate]]~~ is mounted on the chip package so that chip electrical contacts are electrically coupled to associated traces on the support block; and

an ~~[[a]]~~ optical device package mounted on the second face of the support block, the optical device package ~~[[photonic device]]~~ having at least one active facet thereon and having electrical contacts that are electrically coupled to associated traces on the support block;

a second substrate having electrical traces, the second substrate having a port end and an interior end, wherein the port end forms the electrical port; and

a flex connector that is a flexible band containing a plurality of electrically conductive wires, wherein the flex connector connects the electrical traces within the first and the second substrates, whereby the flex connector allows for the adjustable positioning of the height of the optical port with respect to the height of the electrical port.

2. (Currently Amended): An opto-electronic module as recited in claim 1 wherein the flexible band of electrically conductive wires ~~electronic transmission lines~~ is suitable for transmitting differential signals between the first and the second substrate.

3. (Currently Amended): An opto-electronic module as recited in claim 2 wherein the flexible band of electrically conductive wires ~~electronic transmission lines~~ is connected to the interior end of the second substrate and the interior end of the first substrate.

4. (Currently Amended): An opto-electronic module as recited in claim 1 wherein the semiconductor chip includes:

a semiconductor die that is at least partially encapsulated within a protective molding material;

electrical contacts formed on a top surface of the semiconductor die such that that the contacts are exposed through a surface of the protective molding material;

and wherein the optical device package is mounted to the surface of the protective molding material such that the optical device package is electrically connected to the chip package using the electrical traces of the support block ~~[[base substrate]]~~ and the exposed electrical contacts.

5. (Currently Amended): An opto-electronic module as recited in claim 4 wherein the optical device package is ~~[[photonic device]]~~ suitable for receiving or sending optical signals; and

wherein the support block includes electrical traces formed on a flexi tape that is mounted on the support block and extends from the first face to the second face of the block so that the optical device package is ~~[[photonic device]]~~ is electrically connected to the electrical traces of the flexi tape and the exposed electrical contacts of the semiconductor package.

6. (Original): An opto-electronic module as recited in claim 5 wherein there are more than one photonic devices attached to the support block, wherein at least one photonic device is configured to receive optical signals and at least one photonic device is configured to send optical signals.

7. (Currently Amended): An opto-electronic module as recited in claim 5 further comprising:

an electrical converter that is located on the second face of the support block such that single-ended signals travel between the photonic device and the electrical converter, wherein the electrical converter converts single ended signals from the photonic device into differential signals such that differential signals are transmitted to the electrical port and wherein the electrical converter converts differential signals from the electrical port into single ended signals that are transmitted to the photonic device.

8. (Currently Amended): An opto-electronic module as recited in claim 1 wherein the first and second faces of the support block are substantially perpendicular to one another.

9. (Original): An opto-electronic module as recited in claim 4 further comprising:

a barrel unit that is attached to the optical device package, the barrel unit having at least one hollow tube that provides optical access to the optical device package.

10. (Original): An opto-electronic module as recited in claim 1 wherein the opto-electronic device further comprises:

a semiconductor device package having a semiconductor die that is at least partially encapsulated within a protective molding material; and

an optical device package that is in electrical communication with the semiconductor device package.

11. (Original): An opto-electronic module as recited in claim 10 wherein the optical device package further comprises:

at least one photonic device suitable for receiving or sending optical signals.

12. (Currently Amended): An opto-electronic module as recited in claim 1 wherein the first substrate further comprises:

at least one electronic device attached to a surface of the first substrate wherein the electronic device is secured to a position that is directly adjacent to the semiconductor chip package.

13. (Original): An opto-electronic module as recited in claim 1 wherein the first substrate is substantially rigid.

14. (Original): An opto-electronic module as recited in claim 1 wherein the second substrate has a top surface and a bottom surface, and wherein the electrical port includes electrical contacts on the top surface, bottom surface, or top and bottom surfaces of the second substrate.

15. (Original): An opto-electronic module as recited in claim 1 wherein the first and second substrates are printed circuit boards.

16. (Original): An opto-electronic module as recited in claim 1 wherein the electrical and the optical ports face in opposite directions.

17. (Original): An opto-electronic module as recited in claim 1 wherein the second substrate is substantially rigid.

18. (Original): An opto-electronic module as recited in claim 1 wherein the first and second substrates are substantially rigid.

19. (Original): An opto-electronic module as recited in claim 1 wherein the opto-electronic module is suitable for sending, receiving, or sending and receiving data signals at a rate of approximately 2.5 Giga bytes per second or greater.

20. (Original): An opto-electronic module as recited in claim 1 further comprising:

a case that contains the opto-electronic module wherein the case has an optical interface opening to provide access to the optical port and an electrical interface opening to provide access to the electrical port.

21. (Original): An opto-electronic module as recited in claim 1 wherein the flex connector is integrally formed with the first and the second substrate.

22-24. (Canceled)

25. (Currently Amended): An opto-electronic module having an optical port and an electrical port comprising:

a first substrate having electrical traces, a port end, and an interior end;

an opto-electronic device attached to and electrically connected to the first substrate wherein the opto-electronic device serves as the optical port wherein the opto-electronic device comprises:

a semiconductor chip package mounted to the first substrate;

a support block ~~[[base-substrate]]~~ having a first face and a second face that are angled relative to one another with electrical traces that extend from the first face to the second face wherein the first face of the support block ~~[[base-substrate]]~~ is mounted on the chip package so that chip electrical contacts are electrically coupled to associated traces on the support block ~~[[base-substrate]]~~; and

a optical device package mounted on the second face of the support block ~~[[base-substrate]]~~, the optical device package ~~[[photonic device]]~~ having at least one active facet

thereon and having electrical contacts that are electrically coupled to associated traces on the support block ~~[[base-substrate]]~~;

a second substrate having electrical traces, the second substrate having a port end and an interior end, wherein the port end forms the electrical port for electrically connecting the opto-electronic module with an external electrical device; and

an intermediate substrate containing a plurality of electrically conductive traces, wherein the intermediate substrate connects the electrical traces within the first and the second substrates, wherein a thickness of the intermediate substrate separates the height of the optical port with respect to the height of the electrical port by a desired distance.

26. (Original): An opto-electronic module as recited in claim 25 wherein the intermediate substrate is suitable for transmitting differential signals between the first and the second substrate.

27. (Original): An opto-electronic module as recited in claim 25 wherein the intermediate substrate is sandwiched between the second substrate and the first substrate.

28. (Currently Amended): An opto-electronic module as recited in claim 7 wherein the electrical converter located on the second face is located in close proximity to the optical device package ~~[[photonic device]]~~.

29. (Previously Presented): An opto-electronic system comprising:

a protective case, enclosing therein two substantially parallel circuit boards comprising:

a first circuit board having an inside end and an outside end,

the outside end including an electro-optic device comprising:

a support block for supporting a photonic device and having electrical connections thereon,

a photonic device associated with an optical port, the optical port for connection with an external optic device,

a semiconductor chip package for supporting the operation of the photonic device, and

wherein the photonic device is electrically connected with the semiconductor chip package using the electrical connections of the support block;

the inside end of the first circuit board having electrical contacts that are electrically connected with the semiconductor chip package;

a second circuit board having an inside end and an outside end wherein the outside end has electrical contacts for connection with external electrical elements; and

a flexible band of electrical transmission lines that connects and provides electrical communication between the inside ends of the first and second circuit boards such that the electrical contacts of the second circuit board are in communication with the photonic device; and

wherein the electrical contacts of the second circuit board are arranged at one end of the protective case and wherein the photonic device is positioned at an opposite end of the case and facing in the opposite direction from the electrical contacts.

30. (Currently Amended): An opto-electronic module as recited in claim 29 further comprising:

an electrical converter that is located on the support block such that single ended signals travel between the photonic device and the electrical converter, wherein the electrical converter converts single ended signals from the photonic device into differential signals such that differential signals are transmitted to the electrical port and wherein the electrical converter converts differential signals from the electrical port into single ended signals that are transmitted to the photonic device.